

In re Appln. of Zhu et al.
Application No. 10/775,979

CLAIM AMENDMENTS

1. (Currently Amended) A jet ink composition comprising one or more organic solvents, a rosin resin, a co-binder resin, and a colorant, wherein the jet ink composition is free or substantially free of a cellulose nitrate resin, and if a slow evaporating solvent is present, it is present in an amount less than 5% by weight of the jet ink composition.

2. (Currently Amended) A jet ink composition comprising one or more organic solvents, a rosin resin, a vinyl resin, and a colorant, wherein if a slow evaporating solvent is present, it is present in an amount less than 5% by weight of the jet ink composition.

3. (Original) A jet ink composition comprising one or more organic solvents, a rosin resin, and a colorant, wherein the jet ink composition is free or substantially free of a cellulose nitrate resin and slow evaporating solvents, and if a slow evaporating solvent is present, it is present in an amount less than 5% by weight of the jet ink composition.

4. (Original) The jet ink composition of claim 1, wherein said composition has (1) a viscosity from about 1.6 to about 10.0 centipoises at 25 °C; (2) an electrical resistivity from about 50 to about 2000 ohm-cm; and (3) a sonic velocity from about 1100 to about 1700 meters/second.

5. (Original) The jet ink composition of claim 1, wherein said one or more organic solvents are selected from the group consisting of alcohols, ketones, esters, ethers, amides, and combinations thereof.

6. (Original) The jet ink composition of claim 5, wherein one of said ketones is methyl ethyl ketone.

7. (Original) The jet ink composition of claim 1, wherein said rosin resin is a rosin ester resin.

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8. (Original) The jet ink composition of claim 7, wherein the rosin ester resin is a hydrogenated rosin ester resin.

9. (Original) The jet ink composition of claim 8, wherein the hydrogenated rosin ester resin is a glycerol modified hydrogenated rosin ester resin.

10. (Original) The jet ink composition of claim 3, further comprising a co-binder resin.

11. (Original) The jet ink composition of claim 10, wherein the co-binder resin is a vinyl resin.

12. (Original) The jet ink composition of claim 1, wherein the colorant is a dye, pigment, lake, or a combination thereof.

13. (Original) The jet ink composition of claim 12, wherein the colorant is a dye.

14. (Original) The jet ink composition of claim 1, further comprising a plasticizer.

15. (Original) The jet ink composition of claim 1, further comprising a wetting agent.

16. (Original) The jet ink composition of claim 1, further comprising a defoamer.

17. (Original) The jet ink composition of claim 1, wherein the one or more organic solvents are present in an amount of from about 70% to about 90% by weight of the composition, the rosin resin is present in an amount of from about 1% to about 20% by weight of the composition, the co-binder resin is present in an amount of from about 2% to about 10% by weight of the composition, and the colorant is present in an amount of from about 2% to about 15% by weight of the composition.

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18. (Original) The jet ink composition of claim 3, wherein the one or more organic solvents are present in an amount of from about 50% to about 80% by weight of the composition, the rosin resin is present in an amount of from about 20% to about 40% by weight of the composition, and the colorant is present in an amount of from about 5% to about 10% by weight of the composition.

19. (Original) The jet ink composition of claim 17, further comprising a wetting agent in an amount of from about 0.1% to about 1% by weight of the composition.

20. (Original) The jet ink composition of claim 17, further comprising a plasticizer in an amount of from about 0.1% to 2% by weight of the composition.

21. (Original) The jet ink composition of claim 17, further comprising a defoamer in an amount of from 0.5% to about 1.5% by weight of the composition.

22. (Original) A method for printing messages having adhesion on a low surface energy substrate comprising projecting a stream of droplets of the jet ink composition of claim 1 to the substrate, controlling the direction of the stream so that the droplets are caused to form the desired printed messages, and allowing the messages to dry.

23. (Original) The method of claim 22, wherein the low surface energy substrate is a plastic.

24. (Original) The method of claim 23, wherein the plastic is a polyolefin or a halogenated polyolefin.

25. (Original) The method of claim 24, wherein the polyolefin is polypropylene.

26. (Original) The method of claim 25, wherein the polypropylene is mono- or bi-axially oriented polypropylene.

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27. (Original) The method of claim 22, wherein the low surface energy substrate is an oil-contaminated metal.